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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
BLAND, LAYLA D	

ART UNIT	PAPER NUMBER
1623	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/575,073	VELEBNY ET AL.	
	Examiner	Art Unit	
	LAYLA BLAND	1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 March 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 3, 2009 has been entered.

This Office Action is in response to Applicant's request for continued examination (RCE) filed March 3, 2009, and amendment and response to the Final Office Action (mailed December 10, 2008), filed March 3, 2009 wherein claim 11 is amended and claims 12-13 are newly submitted.

Claims 2-13 are pending and are examined on the merits herein.

In view of Applicant's amendment submitted March 3, 2009, the rejection of claims 2-11 under 35 USC 112, second paragraph, for "use" language is withdrawn.

In view of Applicant's amendment submitted March 3, 2009, the rejection of claims 2, 4, 7, 9, and 11 under 35 USC 102(b) as being anticipated by Petito is withdrawn and modified to the 103 rejection presented below.

The following are new rejections:

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claims 11-13 and dependent claims 2-10 recite the limitation "providing instructions for using the composition." The examiner was unable to locate support in the specification as originally filed for that step. This is a new matter rejection.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 11 recites the limitation "in an amount ensuring that the daily dose of every single form of administration contains from 5 to 300 mg of a physiologically acceptable salt of hyaluronic acid." It is unclear how much hyaluronic acid is required in the formulation because it is unclear if a daily dose is one dosage form (such as one capsule or one snack bar) or if a daily dose is comprised of a number of doses spaced throughout the day. The limitation "every single form of administration" implies a number of doses, but the daily dose could be one of those or several of those. Thus, it is unclear whether formulations which contain more than 300

mg of hyaluronic acid meet the limitations of claims 2-11 because there could be more than one daily dose contained therein. Likewise, it is unclear whether formulations which contain less than 5 mg of hyaluronic acid meet the limitations of claim 2-11 because the daily dose could comprise several of those (such as when a single dosage form contains 2 mg of HA but the dosage form is administered three times per day, and thus the daily dose is 6 mg).

The following rejection is maintained:

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2-11 and 13 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the manufacture of a preparation for the treatment of osteoporosis, does not reasonably provide enablement for the manufacture of a preparation for prevention of osteoporosis. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

The factors to be considered in determining whether a disclosure meets the enablement requirements of 35 U.S.C. 112, first paragraph, have been described in *In re Wands*, 858 F.2d 731, 8 USPQ2d 1400 (Fed. Cir., 1988). The court in Wands states, "Enablement is not precluded by the necessity for some experimentation, such as routine screening. However, experimentation needed to practice the invention must not

be undue experimentation. The key word is 'undue', not 'experimentation'" (*Wands*, 8 USPQ2sd 1404). Clearly, enablement of a claimed invention cannot be predicated on the basis of quantity of experimentation required to make or use the invention. "Whether undue experimentation is needed is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations" (*Wands*, 8 USPQ2d 1404). Among these factors are: (1) the nature of the invention; (2) the breadth of the claims; (3) the state of the prior art; (4) the predictability or unpredictability of the art; (5) the relative skill of those in the art; (6) the amount of direction or guidance presented; (7) the presence or absence of working examples; and (8) the quantity of experimentation necessary.

While all of these factors are considered, a sufficient amount for a *prima facie* case is discussed below.

(1) The nature of the invention and (2) the breadth of the claims:

The claims are drawn to a method for manufacturing a preparation for the prevention and treatment of osteoporosis. No limiting definition of prevention is given in the specification. In the absence of a limiting definition by the applicant, the ordinary definition of prevent, "to keep from happening or arising; make impossible," obtained from http://wordnet.princeton.edu, is applied. The claimed composition capable of preventing osteoporosis is therefore interpreted to one which is capable of eliminating the occurrence of osteoporosis.

(3) The state of the prior art and (4) the predictability or unpredictability of the art:

Stancikova et al. (International Journal of Tissue Reactions (2004), 26 (1/2), 9-16, abstract only) teach that oral administration of high molecular weight HA (0.75 MDa and 1.62 MDa) inhibits bone resorption and provides a protective effect on bone density in ovariectomized rats. The study only addressed the effects of HA on ovariectomy-induced bone loss in rats.

However, the risk factors for osteoporosis are many. MayoClinic.com teaches that risk factors for osteoporosis include sex, age, race, family history, frame size, tobacco use, lifetime exposure to estrogen, eating disorders, corticosteroid medications, thyroid hormone, SSRIs, other medications, breast cancer, low calcium intake, medical conditions and procedures that decrease calcium absorption, sedentary lifestyle, excess soda consumption, chronic alcoholism, and depression [pages 3-5]. The skilled artisan would have reason to doubt whether osteoporosis could be prevented, based on the many risk factors for the disease and the small and very specific patient population taught by Stancikova et al.

(6) The amount of direction or guidance presented and (7) the presence or absence of working examples:

The specification has provided guidance for the treatment of experimentally induced osteoporosis in ovarectomised female rats. The specification has not provided guidance for the prevention of osteoporosis in any subject or for the treatment of osteoporosis in subjects other than ovarectomised female rats.

(8) The quantity of experimentation necessary:

Considering the state of the art as discussed by the references above, particularly with regards to the many risk factors for osteoporosis and the high unpredictability in the art as evidenced therein, and the lack of guidance provided in the specification, one of ordinary skill in the art would be burdened with undue experimentation to practice the invention commensurate in the scope of the claims.

Response to Arguments

Applicant argues that a product known to treat a condition is also enabled for preventing that condition, and that Stancikova demonstrates that formation of decomposition products of bone collagen is normalized by oral administration of hyaluronate. Applicant's argument has been considered but is not persuasive. Treatment of a disorder does not automatically enable a method for prevention of that disorder. Treatment of a disorder includes reducing the severity of that disorder. However, prevention is given its ordinary definition, “to keep from happening or arising; make impossible," as set forth above, which requires that the disorder will not occur, not simply that it will occur at a lesser severity. Thus, a product which can treat a disorder, such as aspirin treats a headache, will not necessarily prevent the disorder (a person taking aspirin is still susceptible to headaches, although they might be less severe than if the person had not taken aspirin). As mentioned above, Stancikova studies the effects of HA on *ovariectomy-induced* bone loss, which is also the example given in the instant specification. Because osteoporosis has many causes, as set forth above, Stancikova's teachings do not enable the use of HA to treat osteoporosis caused by other factors, such as calcium deficiency or alcoholism.

The following rejection is maintained and modified:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2 and 4-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petito (US 2003/0069171, April 10. 2003, of record) in view of Leneau (US 6,607,745, August 19, 2003, of record) and Stone (US 6,432,929, August 13, 2002).

Petito teaches a nutritional composition containing sodium hyaluronate [see abstract]. The sodium hyaluronate should have a molecular weight range from about 50,000 to about 3,500,000 Daltons [0022]. Other agents such as vitamins can be added [0024-0025]. The nutritional compositions are formulated into powder, capsule, or tablet form for oral ingestion [0026]. Sodium hyaluronate should be present at about 1-15 mg/kg [claim 17]. For a 70 kg man, this is about 70-1050 mg.

Petito does not exemplify preparation of a composition containing a specific amount of HA, does not exemplify compositions comprising a victual, and does not teach providing instructions for use of the composition.

Leneau teaches a nutritional supplement for relieving discomforts associated with osteoarthritis, containing hyaluronic acid or a salt thereof and a food carrier [see

abstract]. The HA or salt is formulated into a liquid aqueous concentration (considered a syrup) such as a dietary supplement formulation, which is diluted in portions and mixed with food, water, or other beverages [column 2, lines 59-67]. Otherwise the HA or salt can be packaged in individual solid or liquid doses such as capsules or gel seals and the concentrate mixed with a beverage [column 3, lines 1-7]. In one example, patients were given 1-6 mg of HA diluted into beverages or food [column 3, Example 2].

Stone teaches a snack bar or beverage containing cartilage enhancing supplements chondroitin, glucosamine, or hyaluronic acid [see abstract]. Hyaluronic acid was incorporated into snack bars and beverages (including Gatorade™, which contains fruit flavor [columns 9 and 10, Examples 1-10]. Stone's juice base formulation contains potassium sorbate [column 12, Table 3].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to formulate a salt of HA of the recited molecular weight into a composition suitable for oral administration, wherein the composition comprises 5-300 mg of HA. Petito teaches nutritional compositions containing sodium hyaluronate at about 1-15 mg/kg. As set forth above, for a 70 kg man, this is about 70-1050 mg, which has significant overlap with the claimed range. Furthermore, Leneau teaches a nutritional supplement which contains up to 6 mg of HA, which is within the claimed range. It would have been further obvious to prepare a victual comprising HA. Petito teaches "nutritional" compositions, and foods and beverages comprising HA are well known in the art, as taught by Leneau and Stone. Thus, the skilled artisan would know that HA can be administered in a food composition. It is noted that the cited references

do not teach "providing instructions" for the use of the composition. However, there is no patentable weight given to the instructions themselves. It is noted that the written material in the instructions is not considered to be within the statutory classes and does not carry patentable weight. See MPEP 706.03(a). Thus, the claims are not interpreted as being drawn to a method for treating osteoporosis, but a method for preparing a formulation.

Response to Arguments

Applicant argues that Petito requires four components and that the skilled artisan would not expect that HA, without the other three components, to be effective. This argument is not persuasive because the instant claims do not require the use of HA without other active agents. "Comprising" is open language, permitting additional steps.

Applicant argues that the skilled artisan would not combine Petito and Leneau because they teach different dosages. This argument is not persuasive because Petito and Leneau teach HA compositions with similar utility; thus, the skilled artisan would expect that the dosage found in either reference would be effective. Furthermore, both Petito's and Leneau's dosages overlap with the claimed range, if the subject is a 70 kg man.

Applicant argues that Petito and Leneau teach treatment of osteoarthritis, which is different from osteoporosis. This argument is not persuasive because the instant claims are not drawn to treatment of osteoporosis. The claims as recited are drawn to preparation of a formulation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare that formulation, as set forth above.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Petito in view of Leneau and Stone, as applied to claims 2 and 4-11 above, and further in view of Pierce (US 2002/0068718, June 6, 2002).

Petito and Leneau teach as set forth above, the preparation of oral formulations comprising hyaluronic acid or a salt thereof, specifically sodium hyaluronate. Petito and Leneau do not explicitly mention the calcium salt of hyaluronic acid, but the skilled artisan would understand that calcium hyaluronate could be used in place of sodium hyaluronate because such salts of HA are commonly used.

For example, Pierce teaches a pharmaceutical composition for osteoarthritis comprising hyaluronic acid or a salt thereof [see abstract], wherein a typical salt includes calcium hyaluronate [paragraph 0056]. Thus, it would have been obvious to use calcium hyaluronate in the formulation as discussed above.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAYLA BLAND whose telephone number is (571)272-9572. The examiner can normally be reached on Monday - Friday, 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anna Jiang can be reached on (571) 272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Layla Bland/
Examiner, Art Unit 1623

/Shaojia Anna Jiang/
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